Isokinetic Assessment of Wrist Muscles Performance among Egyptian Physical Therapy Students with Chronic Non-Specific Neck Pain

Thesis
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Data analysis and statistical design

Data were expressed as mean± SD. Unpaired t-test was used to compare between subjects characteristics of the two groups. One way MANOVA was used to compare measured variables between the two groups. Statistical package for the social sciences computer program (version 20 for Windows; SPSS Inc., Chicago, Illinois, USA) was used for data analysis. *P* less than or equal to 0.05 was considered significant.

CHAPTER IV

RESULTS

The main aim of this study was to assess the effect of chronic non-specific neck pain on peak torque of wrist extensor and flexor muscles /body weight, extensor / flexor wrist ratio and on wrist extensor and flexor muscles endurance among Egyptian physical therapy students.

Demographic data of subjects:

A total of 44 students participated in this study; they were assigned into 2 equal groups, Group A, study group, was include twenty two students with chronic non-specific neck pain (CNSNP) and Group B, control group, was include students without CNSNP.

As shown in table (1) and figures (1-4); the mean values of age of groups A and B were (20.6±1.8) and (20.5±1.7) years respectively, and of weight were (68.6±10.7) and (72.1±12.5) kg respectively, the mean values of height of groups A and B were (170.5±7.8) and (171.2±10.3) cm respectively, and of BMI were (23.4±2.4) and (24.7±3.1) kg/m^2 respectively. There were no significant differences between both groups of mean age, weight, height and BMI (p> 0.05).

Table (1): Subjects characteristics of both groups

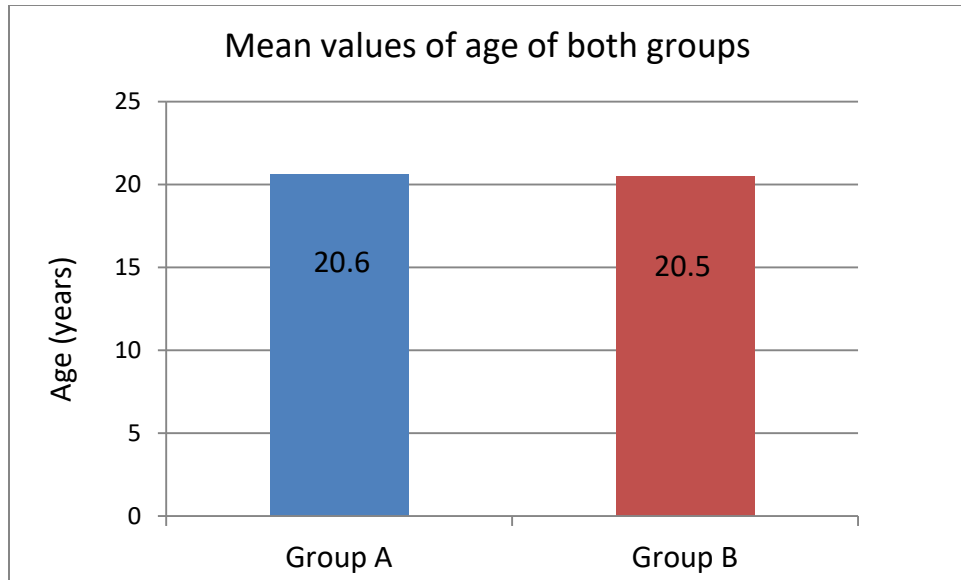| Measurd variable	Group A Mean±SD	Group B Mean±SD	t-value	p-value
Age (years)	20.6±1.8	20.5±1.7	0.085	0.933
Weight (kg)	68.6±10.7	72.1±12.5	-1	0.314
Height (cm)	170.5±7.8	171.2±10.3	-0.247	0.806
BMI (kg/m^2)	23.4±2.4	24.7±3.1	-1.47	0.149

Fig 1: mean values of subjects age of both groups
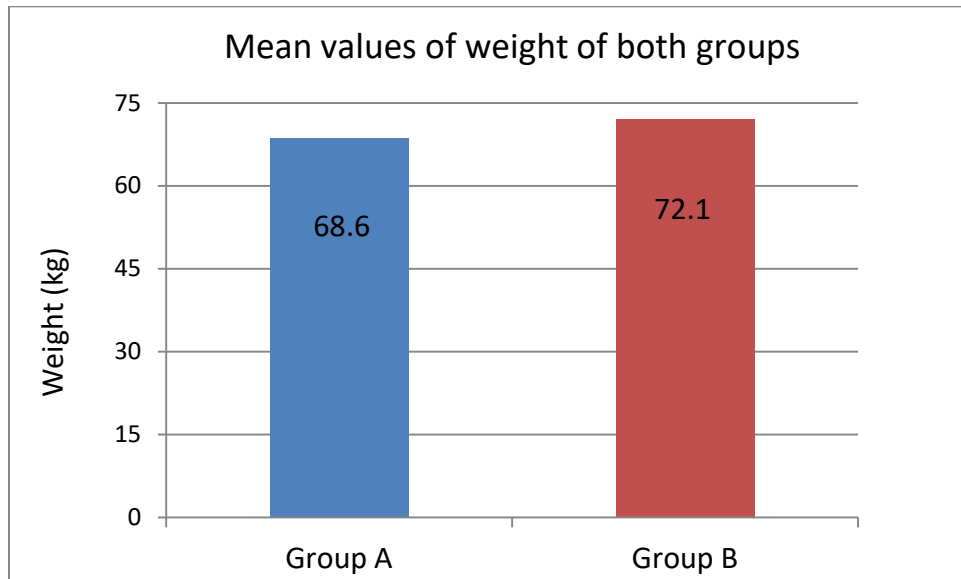

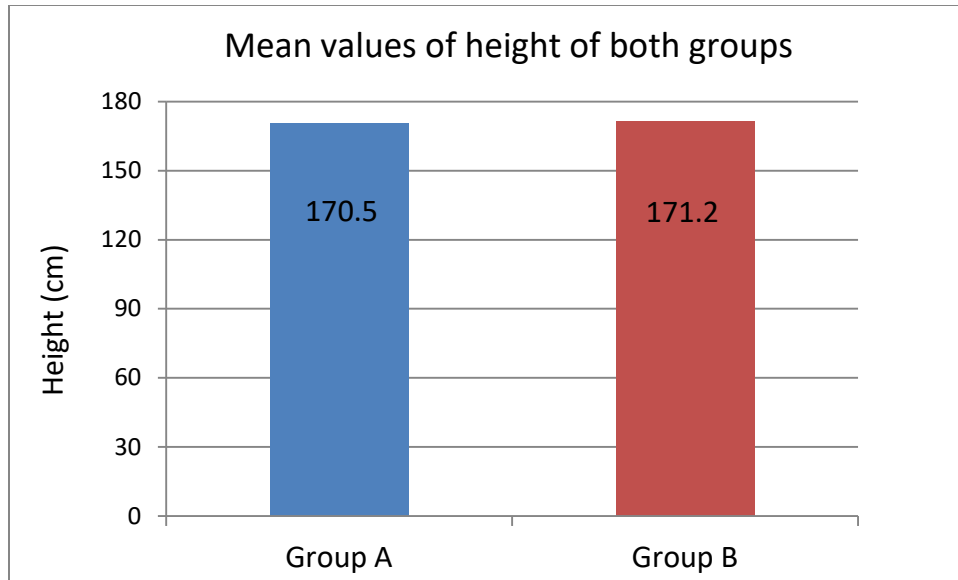Fig 2: mean values of subjects weight of both groups

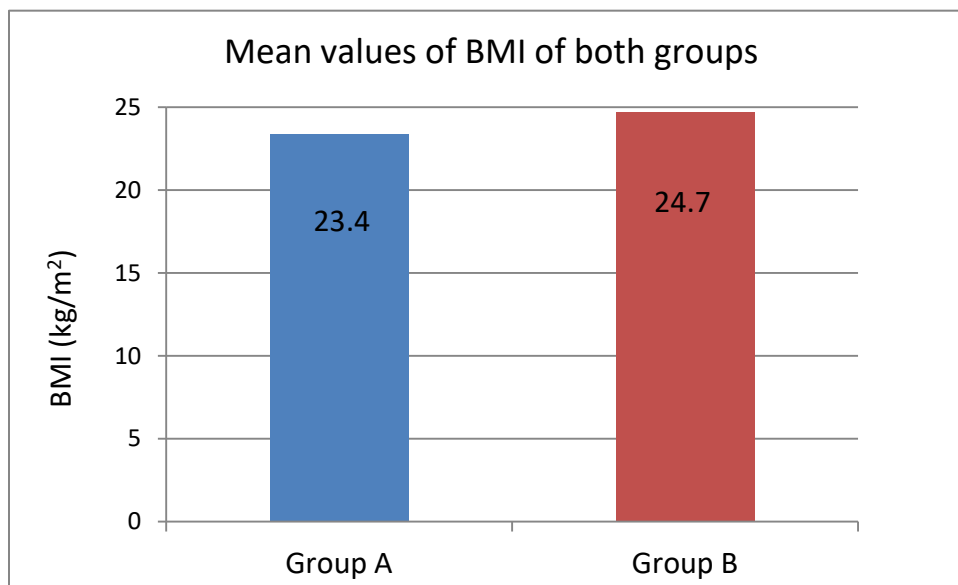Fig 3: mean values of subjects height of both groups

Fig 4: mean values of subjects BMI of both groups

Normality test:

Data were screened for normality assumption, homogeneity of variance, and presence of extreme scores. Shapiro-Wilk test for normality showed that all measured variables are normally distributed, so one way

MANOVA for between groups' comparison and Pearson coefficient correlation for finding the relation between variables were used.

Table (2): Comparison of mean values of measured variables between groups.

Measured variables	Group A Mean ±SD	Group B Mean ±SD	Mean difference	P value
Agonist/ antagonist ratio (%)				
At 60°/sec	90.7± 18.1	92.7± 25.5	-2	0.762
At 180°/sec	85.3± 19.3	77.7± 22.8	7.6	0.238

SD: standard deviation   p-value: probability value

VII- Effect of CNSNP on agonist/antagonist ratio:

As shown in table (2) and demonstrated in figure (9), the mean values ± SD of agonist/antagonist ratio at (60 and 180°/sec) for subjects in groups A and B were (90.7 ± 18.1 and 85.3 ± 19.3) and (92.7± 25.5 and 77.7 ± 22.8) % respectively. There was statistical non-significant difference in the mean values of agonist/antagonist ratio at 60 and 180°/sec between both groups (P>0.05).
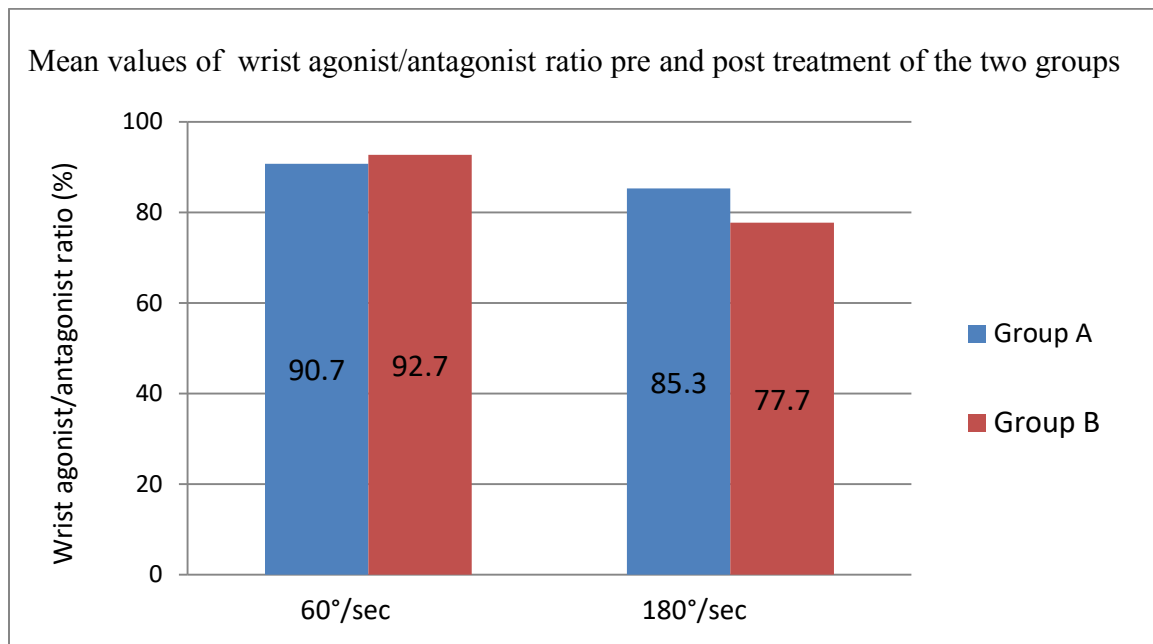

Fig 9: mean values of wrist agonist/antagonist ratio of the two groups